

October 29, 2013

Mr. Ben Rao
Alpha Analytical Laboratory
8 Walkup Drive
Westborough, Massachusetts 01581

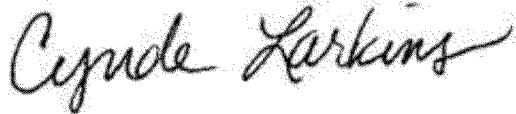
Re: NJ PCB and DXN
Work Order: 5497
SDG: L1320796

Dear Mr. Rao:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 22, 2013. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynthia Larkins
Project Manager

Enclosures

Sub UFS-1 Cape Fear Analytical

CHAIN OF CUSTODY



PAGE 1 OF 1

Report Information Data Deliverables

<input type="checkbox"/> FAX	<input checked="" type="checkbox"/> EMAIL
<input type="checkbox"/> ADEX	<input type="checkbox"/> Add'l Deliverables

Project Name:

Project Location: NY

Client Information

Project #:

Project Manager: Ben Rao

ALPHA Quote #:

Turn-Around Time

Rush (ONLY IF PRE-APPROVED)

Standard

Time:

Email: reporting@alphalab.com bros@alphalab.com

Due Date:

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1320796 on Report.

Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials
AAI THRU AA13	10/15/13	14:05		

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS				
Regulatory Requirements/Report Limits				SAMPLE HANDLING
State/Fed Program				<input type="checkbox"/> Filtration <input type="checkbox"/> Done <input type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do <input type="checkbox"/> Preservation <input type="checkbox"/> Lab to do (Please specify below)
Criteria				Sample Specific Comments
ANALYSIS				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
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PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
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PCb Homologs/Congeners by Method 1668A				
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PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				
PCb Homologs/Congeners by Method 1668A				
PCDD/PCDF by Method 1613B				

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: <u>ALPHA</u>	Work Order: <u>5497</u>
Received By: <u>Cynde Larkins</u>	Date/Time Received: <u>22 OCT 13 0930</u>

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?			<input checked="" type="checkbox"/>
Samples < 2x background?			<input checked="" type="checkbox"/>

* Notify RSO of any responses in this column immediately.

Sample Receipt Criteria			Comments/Qualifiers (required for Non-Conforming Items)
Criteria #	Yes	NA	No
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>		Circle Applicable: seals broken damaged container leaking container other(describe)
2 Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>		
3 Samples requiring cold preservation within 0-6°C?	<input checked="" type="checkbox"/>		Preservation Method: <u>ice bags</u> blue ice dry ice none other (describe) <u>1.0°</u>
4 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
5 Samples requiring preservation have no residual chlorine?	<input checked="" type="checkbox"/>		Sample IDs, containers affected: If preservative added, Lot#:
6 Samples received within holding time?	<input checked="" type="checkbox"/>		Sample IDs, tests affected:
7 Sample IDs on COC match IDs on containers?	<input checked="" type="checkbox"/>		Sample IDs, containers affected:
8 Date & time of COC match date & time on containers?	<input type="checkbox"/>		Sample IDs, containers affected: <u>No collection time on label</u>
9 Number of containers received match number indicated on COC?	<input type="checkbox"/>		Sample IDs, containers affected: <u>Number of containers not noted on COC (1)</u>
10 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>		

Comments:

Checklist performed by: Initials: CF Date: 22 OCT 13

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Alpha Analytical Laboratory (ALPH)
SDG L1320796
Work Order 5497

Method/Analysis Information

Product: Dioxins/Furans by EPA Method 1613B in Solids
Analytical Method: EPA Method 1613B
Extraction Method: SW846 3540C
Analytical Batch Number: 24707
Clean Up Batch Number: 24678
Extraction Batch Number: 24677

Sample Analysis

The following samples were analyzed using the analytical protocol as established in Method 1613B:

Sample ID	Client ID
5497001	AA1 thru AA13
12009240	Method Blank (MB)
12009241	Laboratory Control Sample (LCS)
12009242	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 12.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement

The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard.

Method Blank (MB) Statement

The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery

The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement

The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

Due to limited sample availability, a 5g aliquot was used for extraction. 5497001 (AA1 thru AA13)- Batch 24707.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation

A NCR was not required for this SDG.

Manual Integrations

Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

Manual integrations were required for data files in this SDG.

Sample preparation

No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Certificate of Analysis Report for

ALPH001 Alpha Analytical Laboratory
Client SDG: L1320796 CFA Work Order: 5497

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 29 OCT 2013

Title: Analyst III

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 2

SDG Number: L1320796
Lab Sample ID: 5497001
Client Sample: 1613B /1668A Soil
Client ID: AA1 thru AA13
Batch ID: 24707
Run Date: 10/28/2013 22:34
Data File: b28oct13b-8
Prep Batch: 24677
Prep Date: 23-OCT-13

Client: ALPH001
Date Collected: 10/15/2013 14:05
Date Received: 10/22/2013 09:30
Method: EPA Method 1613B
Analyst: JTF
Prep Method: SW846 3540C
Aliquot: 5.15 g

Project: ALPH00313
Matrix: SOLID
%Moisture: 21.7
Prep Basis: Dry Weight
Instrument: HRP763
Dilution: 1

CAS No.	Parname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	2.48	pg/g	2.48
40321-76-4	1,2,3,7,8-PeCDD	U	12.4	pg/g	12.4
39227-28-6	1,2,3,4,7,8-HxCDD	U	12.4	pg/g	12.4
57653-85-7	1,2,3,6,7,8-HxCDD	U	12.4	pg/g	12.4
19408-74-3	1,2,3,7,8,9-HxCDD	U	12.4	pg/g	12.4
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	12.4	pg/g	12.4
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	24.8	pg/g	24.8
51207-31-9	2,3,7,8-TCDF	U	2.48	pg/g	2.48
57117-41-6	1,2,3,7,8-PeCDF	U	12.4	pg/g	12.4
57117-31-4	2,3,4,7,8-PeCDF	U	12.4	pg/g	12.4
70648-26-9	1,2,3,4,7,8-HxCDF	U	12.4	pg/g	12.4
57117-44-9	1,2,3,6,7,8-HxCDF	U	12.4	pg/g	12.4
60851-34-5	2,3,4,6,7,8-HxCDF	U	12.4	pg/g	12.4
72918-21-9	1,2,3,7,8,9-HxCDF	U	12.4	pg/g	12.4
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	12.4	pg/g	12.4
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	12.4	pg/g	12.4
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	24.8	pg/g	24.8
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	2.48	pg/g	2.48
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	12.4	pg/g	12.4
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	12.4	pg/g	12.4
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	12.4	pg/g	12.4
30402-14-3	Total Tetrachlorodibenzofuran	U	2.48	pg/g	2.48
30402-15-4	Total Pentachlorodibenzofuran	U	12.4	pg/g	12.4
55684-94-1	Total Hexachlorodibenzofuran	U	12.4	pg/g	12.4
38998-75-3	Total Heptachlorodibenzofuran	U	12.4	pg/g	12.4
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		14.2	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		427	496	pg/g	86.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		451	496	pg/g	90.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		365	496	pg/g	73.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		396	496	pg/g	79.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		473	496	pg/g	95.3	(23%-140%)
13C-OCDD		747	993	pg/g	75.3	(17%-157%)
13C-2,3,7,8-TCDF		458	496	pg/g	92.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		539	496	pg/g	109	(24%-185%)
13C-2,3,4,7,8-PeCDF		530	496	pg/g	107	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		463	496	pg/g	93.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		497	496	pg/g	100	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		504	496	pg/g	102	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		485	496	pg/g	97.7	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 2 of 2

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	5497001	Date Collected:	10/15/2013 14:05	Matrix:	SOLID
Client Sample:	1613B /1668A Soil	Date Received:	10/22/2013 09:30	%Moisture:	21.7
Client ID:	AA1 thru AA13			Prep Basis:	Dry Weight
Batch ID:	24707	Method:	EPA Method 1613B		
Run Date:	10/28/2013 22:34	Analyst:	JTF	Instrument:	HRP763
Data File:	b28oct13b-8			Dilution:	1
Prep Batch:	24677	Prep Method:	SW846 3540C		
Prep Date:	23-OCT-13	Aliquot:	5.15 g		

CAS No.	Paramname	Qual	Result	Units	PQL
Surrogate/Tracer recovery					
13C-1,2,3,4,6,7,8-HpCDF		518	496	pg/g	104 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		489	496	pg/g	98.6 (26%-138%)
37Cl-2,3,7,8-TCDD		40.0	49.6	pg/g	80.7 (35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: L1320796

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12009241	LCS for batch 24677	13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-OCDD 13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF 37Cl-2,3,7,8-TCDD		86.6 78.6 76.3 81.8 95.7 69.6 88.3 92.7 88.2 90.1 97.3 98.6 94.8 102 95.3 83.1	(20%-175%) (21%-227%) (21%-193%) (25%-163%) (22%-166%) (13%-199%) (22%-152%) (21%-192%) (13%-328%) (19%-202%) (21%-159%) (22%-176%) (17%-205%) (21%-158%) (20%-186%) (31%-191%)
12009242	LCSD for batch 24677	13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-OCDD 13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF 37Cl-2,3,7,8-TCDD		85.6 84.6 76.3 75.4 96.6 70.5 89.5 99.7 98.1 93.4 101 102 99.9 104 100 81.7	(20%-175%) (21%-227%) (21%-193%) (25%-163%) (22%-166%) (13%-199%) (22%-152%) (21%-192%) (13%-328%) (19%-202%) (21%-159%) (22%-176%) (17%-205%) (21%-158%) (20%-186%) (31%-191%)
12009240	MB for batch 24677	13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-OCDD 13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF 37Cl-2,3,7,8-TCDD		87.3 84.4 70.8 82.2 90.7 65.5 90.5 99.6 93.4 90.3 101 99.0 92.5 102 90.8 84.9	(25%-164%) (25%-181%) (32%-141%) (28%-130%) (23%-140%) (17%-157%) (24%-169%) (24%-185%) (21%-178%) (26%-152%) (26%-123%) (28%-136%) (29%-147%) (28%-143%) (26%-138%) (35%-197%)
5497001	AA1 thru AA13	13C-2,3,7,8-TCDD		86.0	(25%-164%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: L1320796

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5497001	AA1 thru AA13	13C-1,2,3,7,8-PeCDD		90.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		73.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.3	(23%-140%)
		13C-OCDD		75.3	(17%-157%)
		13C-2,3,7,8-TCDF		92.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		109	(24%-185%)
		13C-2,3,4,7,8-PeCDF		107	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		93.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		100	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		102	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		97.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		104	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		98.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		80.7	(35%-197%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Hi-Res Dioxins/Furans

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Quality Control Summary

Spike Recovery Report

SDG Number: L1320796

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 24677

Matrix: SOLID

Lab Sample ID: 12009241

Instrument: HRP763

Analysis Date: 10/28/2013 17:55

Dilution: 1

Analyst: JTF

Prep Batch ID: 24677

Batch ID: 24707

CAS No.	Parmname	Amount	Spike	Acceptance	
		Added pg/g	Conc. pg/g	%	Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	16.8	84 67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	103	103 70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	117	117 70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	118	118 76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	131	131 64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	104	104 70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	224	112 78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	20.9	105 75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	101	101 80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	100	100 68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	103	103 72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	106	106 84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	107	107 70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	104	104 78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	110	110 82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	108	108 78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	248	124 63-170

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: L1320796

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 24677

Matrix: SOLID

Lab Sample ID: 12009242

Analysis Date: 10/28/2013 18:42

Instrument: HRP763

Dilution: 1

Analyst: JTF

Prep Batch ID: 24677

Batch ID: 24707

CAS No.	Parmname	Amount	Spike	Recovery %	Acceptance Limits	RPD %	Acceptance Limits	
		Added pg/g	Conc. pg/g					
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	17.3	86.5	67-158	2.99	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	105	105	70-142	1.59	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	124	124	70-164	5.89	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	122	122	76-134	3.92	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	132	132	64-162	1.33	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	102	102	70-140	1.89	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	221	110	78-144	1.58	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	21.0	105	75-158	0.267	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	103	103	80-134	2.12	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	101	101	68-160	0.449	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	106	106	72-134	2.42	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	109	109	84-130	2.49	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	106	106	70-156	1.09	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	105	105	78-130	0.871	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	112	112	82-122	2.43	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	105	105	78-138	2.38	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	260	130	63-170	4.75	0-20

Method Blank Summary

SDG Number: L1320796
Client ID: MB for batch 24677
Lab Sample ID: 12009240
Column:

Client: ALPH001
Instrument ID: HRP763
Prep Date: 23-OCT-13

Matrix: SOLID
Data File: b28oct13b-4
Analyzed: 10/28/13 19:28

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 24677	12009241	b28oct13b-2	10/28/13	1755
02 LCSD for batch 24677	12009242	b28oct13b-3	10/28/13	1842
03 AA1 thru AA13	5497001	b28oct13b-8	10/28/13	2234

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009240			Matrix:	SOLID
Client Sample:	QC for batch 24677				
Client ID:	MB for batch 24677			Prep Basis:	As Received
Batch ID:	24707	Method:	EPA Method 1613B		
Run Date:	10/28/2013 19:28	Analyst:	JTF	Instrument:	HRP763
Data File:	b28oct13b-4			Dilution:	1
Prep Batch:	24677	Prep Method:	SW846 3540C		
Prep Date:	23-OCT-13	Aliquot:	10 g		

CAS No.	Parname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	5	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	10	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	5	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	5	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	1	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.70	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		175	200	pg/g	87.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		169	200	pg/g	84.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		142	200	pg/g	70.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		164	200	pg/g	82.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		181	200	pg/g	90.7	(23%-140%)
13C-OCDD		262	400	pg/g	65.5	(17%-157%)
13C-2,3,7,8-TCDF		181	200	pg/g	90.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		199	200	pg/g	99.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		187	200	pg/g	93.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		181	200	pg/g	90.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		201	200	pg/g	101	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		198	200	pg/g	99.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		185	200	pg/g	92.5	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 2 of 2

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009240			Matrix:	SOLID
Client Sample:	QC for batch 24677				
Client ID:	MB for batch 24677			Prep Basis:	As Received
Batch ID:	24707	Method:	EPA Method 1613B		
Run Date:	10/28/2013 19:28	Analyst:	JTF	Instrument:	HRP763
Data File:	b28oct13b-4			Dilution:	1
Prep Batch:	24677	Prep Method:	SW846 3540C		
Prep Date:	23-OCT-13	Aliquot:	10 g		

CAS No.	Parname	Qual	Result	Units	PQL
Surrogate/Tracer recovery					
13C-1,2,3,4,6,7,8-HpCDF		204	200	pg/g	102 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		182	200	pg/g	90.8 (26%-138%)
37Cl-2,3,7,8-TCDD		17.0	20.0	pg/g	84.9 (35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 1

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009241			Matrix:	SOLID
Client Sample:	QC for batch 24677				
Client ID:	LCS for batch 24677			Prep Basis:	As Received
Batch ID:	24707	Method:	EPA Method 1613B		
Run Date:	10/28/2013 17:55	Analyst:	JTF	Instrument:	HRP763
Data File:	b28oct13b-2			Dilution:	1
Prep Batch:	24677	Prep Method:	SW846 3540C		
Prep Date:	23-OCT-13	Aliquot:	10 g		

CAS No.	Paramname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		16.8	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		103	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		117	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		118	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		131	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		104	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		224	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		20.9	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		101	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		100	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		103	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		106	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		107	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		104	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		110	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		108	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		248	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		173	200	pg/g	86.6	(20%-175%)
13C-1,2,3,7,8-PeCDD		157	200	pg/g	78.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		153	200	pg/g	76.3	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		164	200	pg/g	81.8	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		191	200	pg/g	95.7	(22%-166%)
13C-OCDD		278	400	pg/g	69.6	(13%-199%)
13C-2,3,7,8-TCDF		177	200	pg/g	88.3	(22%-152%)
13C-1,2,3,7,8-PeCDF		185	200	pg/g	92.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		176	200	pg/g	88.2	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		180	200	pg/g	90.1	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		195	200	pg/g	97.3	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		197	200	pg/g	98.6	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		190	200	pg/g	94.8	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		205	200	pg/g	102	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		191	200	pg/g	95.3	(20%-186%)
37Cl-2,3,7,8-TCDD		16.6	20.0	pg/g	83.1	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009242			Matrix:	SOLID
Client Sample:	QC for batch 24677				
Client ID:	LCSD for batch 24677			Prep Basis:	As Received
Batch ID:	24707	Method:	EPA Method 1613B		
Run Date:	10/28/2013 18:42	Analyst:	JTF	Instrument:	HRP763
Data File:	b28oct13b-3	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24677	Aliquot:	10 g		
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		17.3	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		105	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		124	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		122	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		132	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		102	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		221	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		21.0	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		101	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		106	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		109	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		106	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		112	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		105	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		260	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		171	200	pg/g	85.6	(20%-175%)
13C-1,2,3,7,8-PeCDD		169	200	pg/g	84.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		153	200	pg/g	76.3	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		151	200	pg/g	75.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		193	200	pg/g	96.6	(22%-166%)
13C-OCDD		282	400	pg/g	70.5	(13%-199%)
13C-2,3,7,8-TCDF		179	200	pg/g	89.5	(22%-152%)
13C-1,2,3,7,8-PeCDF		199	200	pg/g	99.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		196	200	pg/g	98.1	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		187	200	pg/g	93.4	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		201	200	pg/g	101	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		204	200	pg/g	102	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		200	200	pg/g	99.9	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		208	200	pg/g	104	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		201	200	pg/g	100	(20%-186%)
37Cl-2,3,7,8-TCDD		16.3	20.0	pg/g	81.7	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners

Analysis

Case Narrative

PCBC Case Narrative
Alpha Analytical Laboratory (ALPH)
SDG L1320796
Work Order 5497

Method/Analysis Information

Product: PCB Congeners by EPA Method 1668A in Solids
Analytical Method: EPA Method 1668A
Extraction Method: SW846 3540C
Analytical Batch Number: 24706
Clean Up Batch Number: 24705
Extraction Batch Number: 24704

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
5497001	AA1 thru AA13
12009267	Method Blank (MB)
12009268	Laboratory Control Sample (LCS)
12009269	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement

The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard. Any known exceptions are discussed in the narrative.

Method Blank (MB) Statement

The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery

The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement

The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

Due to limited sample availability, a 5g aliquot was used for extraction. 5497001 (AA1 thru AA13).

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation

A NCR was not required for this SDG.

Manual Integrations

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration

This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	High-Resolution GC/MS System	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Certificate of Analysis Report for

ALPH001 Alpha Analytical Laboratory
Client SDG: L1320796 CFA Work Order: 5497

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 29 OCT 2013

Title: Analyst III

**PCB Congeners
Certificate of Analysis
Sample Summary**

Page 1 of 8

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	5497001	Date Collected:	10/15/2013 14:05	Matrix:	SOLID
Client Sample:	1613B /1668A Soil	Date Received:	10/22/2013 09:30	%Moisture:	21.7
Client ID:	AA1 thru AA13			Prep Basis:	Dry Weight
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 20:02	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-5	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	5.17 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	12.4	pg/g	12.4
2051-61-8	2-MoCB	U	4.94	pg/g	4.94
2051-62-9	3-MoCB	U	4.94	pg/g	4.94
13029-08-8	4-DiCB	U	9.89	pg/g	9.89
16605-91-7	5-DiCB	U	9.89	pg/g	9.89
25569-80-6	6-DiCB	U	4.94	pg/g	4.94
33284-50-3	7-DiCB	U	9.89	pg/g	9.89
34883-43-7	8-DiCB	U	49.4	pg/g	49.4
34883-39-1	9-DiCB	U	4.94	pg/g	4.94
33146-45-1	10-DiCB	U	9.89	pg/g	9.89
2050-67-1	11-DiCB	U	124	pg/g	124
2974-92-7	12-DiCB	CU	19.8	pg/g	19.8
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	9.89	pg/g	9.89
2050-68-2	15-DiCB	U	49.4	pg/g	49.4
38444-78-9	16-TrCB	U	9.89	pg/g	9.89
37680-66-3	17-TrCB	U	9.89	pg/g	9.89
37680-65-2	18-TrCB	CU	9.89	pg/g	9.89
38444-73-4	19-TrCB	U	4.94	pg/g	4.94
38444-84-7	20-TrCB	CU	49.4	pg/g	49.4
55702-46-0	21-TrCB	CU	19.8	pg/g	19.8
38444-85-8	22-TrCB	U	9.89	pg/g	9.89
55720-44-0	23-TrCB	U	4.94	pg/g	4.94
55702-45-9	24-TrCB	U	4.94	pg/g	4.94
55712-37-3	25-TrCB	U	4.94	pg/g	4.94
38444-81-4	26-TrCB	CU	9.89	pg/g	9.89
38444-76-7	27-TrCB	U	4.94	pg/g	4.94
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	24.7	pg/g	24.7
38444-77-8	32-TrCB	U	4.94	pg/g	4.94

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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**PCB Congeners
Certificate of Analysis
Sample Summary**

Page 2 of 8

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	5497001	Date Collected:	10/15/2013 14:05	Matrix:	SOLID
Client Sample:	1613B /1668A Soil	Date Received:	10/22/2013 09:30	%Moisture:	21.7
Client ID:	AA1 thru AA13			Prep Basis:	Dry Weight
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 20:02	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-5	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	5.17 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	4.94	pg/g	4.94
37680-69-6	35-TrCB	U	9.89	pg/g	9.89
38444-87-0	36-TrCB	U	9.89	pg/g	9.89
38444-90-5	37-TrCB	U	49.4	pg/g	49.4
53555-66-1	38-TrCB	U	4.94	pg/g	4.94
38444-88-1	39-TrCB	U	9.89	pg/g	9.89
38444-93-8	40-TeCB	CU	9.89	pg/g	9.89
52663-59-9	41-TeCB	U	4.94	pg/g	4.94
36559-22-5	42-TeCB	U	4.94	pg/g	4.94
70362-46-8	43-TeCB	U	9.89	pg/g	9.89
41464-39-5	44-TeCB	CU	14.8	pg/g	14.8
70362-45-7	45-TeCB	CU	9.89	pg/g	9.89
41464-47-5	46-TeCB	U	4.94	pg/g	4.94
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	4.94	pg/g	4.94
41464-40-8	49-TeCB	CU	9.89	pg/g	9.89
62796-65-0	50-TeCB	CU	9.89	pg/g	9.89
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		5.57	pg/g	4.94
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	4.94	pg/g	4.94
74338-24-2	55-TeCB	U	4.94	pg/g	4.94
41464-43-1	56-TeCB	U	9.89	pg/g	9.89
70424-67-8	57-TeCB	U	4.94	pg/g	4.94
41464-49-7	58-TeCB	U	4.94	pg/g	4.94
74472-33-6	59-TeCB	CU	14.8	pg/g	14.8
33025-41-1	60-TeCB	U	9.89	pg/g	9.89
33284-53-6	61-TeCB	CU	19.8	pg/g	19.8
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	12.4	pg/g	12.4
52663-58-8	64-TeCB	U	4.94	pg/g	4.94

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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**PCB Congeners
Certificate of Analysis
Sample Summary**

Page 3 of 8

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	5497001	Date Collected:	10/15/2013 14:05	Matrix:	SOLID
Client Sample:	1613B /1668A Soil	Date Received:	10/22/2013 09:30	%Moisture:	21.7
Client ID:	AA1 thru AA13			Prep Basis:	Dry Weight
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 20:02	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-5	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	5.17 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	12.4	pg/g	12.4
73575-53-8	67-TeCB	U	4.94	pg/g	4.94
73575-52-7	68-TeCB	U	4.94	pg/g	4.94
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	9.89	pg/g	9.89
74338-23-1	73-TeCB	U	4.94	pg/g	4.94
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	4.94	pg/g	4.94
70362-49-1	78-TeCB	U	4.94	pg/g	4.94
41464-48-6	79-TeCB	U	9.89	pg/g	9.89
33284-52-5	80-TeCB	U	9.89	pg/g	9.89
70362-50-4	81-TeCB	U	4.94	pg/g	4.94
52663-62-4	82-PeCB	U	12.4	pg/g	12.4
60145-20-2	83-PeCB	U	4.94	pg/g	4.94
52663-60-2	84-PeCB	U	4.94	pg/g	4.94
65510-45-4	85-PeCB	CU	14.8	pg/g	14.8
55312-69-1	86-PeCB	CU	29.7	pg/g	29.7
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	9.89	pg/g	9.89
73575-57-2	89-PeCB	U	4.94	pg/g	4.94
68194-07-0	90-PeCB	CU	14.8	pg/g	14.8
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	4.94	pg/g	4.94
73575-56-1	93-PeCB	CU	9.89	pg/g	9.89
73575-55-0	94-PeCB	U	4.94	pg/g	4.94
38379-99-6	95-PeCB	U	9.89	pg/g	9.89
73575-54-9	96-PeCB	U	4.94	pg/g	4.94

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

Page 4 of 8

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	5497001	Date Collected:	10/15/2013 14:05	Matrix:	SOLID
Client Sample:	1613B /1668A Soil	Date Received:	10/22/2013 09:30	%Moisture:	21.7
Client ID:	AA1 thru AA13			Prep Basis:	Dry Weight
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 20:02	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-5	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	5.17 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	9.89	pg/g	9.89
38380-01-7	99-PeCB	U	4.94	pg/g	4.94
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	12.4	pg/g	12.4
56558-16-8	104-PeCB	U	4.94	pg/g	4.94
32598-14-4	105-PeCB	U	4.94	pg/g	4.94
70424-69-0	106-PeCB	U	4.94	pg/g	4.94
70424-68-9	107-PeCB	U	9.89	pg/g	9.89
70362-41-3	108-PeCB	CU	9.89	pg/g	9.89
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	9.89	pg/g	9.89
39635-32-0	111-PeCB	U	4.94	pg/g	4.94
74472-36-9	112-PeCB	U	4.94	pg/g	4.94
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	4.94	pg/g	4.94
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	9.89	pg/g	9.89
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	4.94	pg/g	4.94
56558-18-0	121-PeCB	U	4.94	pg/g	4.94
76842-07-4	122-PeCB	U	4.94	pg/g	4.94
65510-44-3	123-PeCB	U	4.94	pg/g	4.94
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	4.94	pg/g	4.94
39635-33-1	127-PeCB	U	4.94	pg/g	4.94
38380-07-3	128-HxCB	CU	9.89	pg/g	9.89

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

Page 5 of 8

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	5497001	Date Collected:	10/15/2013 14:05	Matrix:	SOLID
Client Sample:	1613B /1668A Soil	Date Received:	10/22/2013 09:30	%Moisture:	21.7
Client ID:	AA1 thru AA13			Prep Basis:	Dry Weight
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 20:02	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-5	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	5.17 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	14.8	pg/g	14.8
52663-66-8	130-HxCB	U	4.94	pg/g	4.94
61798-70-7	131-HxCB	U	4.94	pg/g	4.94
38380-05-1	132-HxCB	U	4.94	pg/g	4.94
35694-04-3	133-HxCB	U	4.94	pg/g	4.94
52704-70-8	134-HxCB	U	4.94	pg/g	4.94
52744-13-5	135-HxCB	CU	9.89	pg/g	9.89
38411-22-2	136-HxCB	U	4.94	pg/g	4.94
35694-06-5	137-HxCB	U	4.94	pg/g	4.94
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	9.89	pg/g	9.89
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	9.89	pg/g	9.89
41411-61-4	142-HxCB	U	4.94	pg/g	4.94
68194-15-0	143-HxCB	U	4.94	pg/g	4.94
68194-14-9	144-HxCB	U	4.94	pg/g	4.94
74472-40-5	145-HxCB	U	4.94	pg/g	4.94
51908-16-8	146-HxCB	U	4.94	pg/g	4.94
68194-13-8	147-HxCB	CU	19.8	pg/g	19.8
74472-41-6	148-HxCB	U	4.94	pg/g	4.94
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	4.94	pg/g	4.94
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	4.94	pg/g	4.94
35065-27-1	153-HxCB	CU	19.8	pg/g	19.8
60145-22-4	154-HxCB	U	4.94	pg/g	4.94
33979-03-2	155-HxCB	U	4.94	pg/g	4.94
38380-08-4	156-HxCB	CU	9.89	pg/g	9.89
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	4.94	pg/g	4.94
39635-35-3	159-HxCB	U	4.94	pg/g	4.94
41411-62-5	160-HxCB	U	4.94	pg/g	4.94

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
 U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

Page 6 of 8

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	5497001	Date Collected:	10/15/2013 14:05	Matrix:	SOLID
Client Sample:	1613B /1668A Soil	Date Received:	10/22/2013 09:30	%Moisture:	21.7
Client ID:	AA1 thru AA13			Prep Basis:	Dry Weight
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 20:02	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-5	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	5.17 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	4.94	pg/g	4.94
39635-34-2	162-HxCB	U	4.94	pg/g	4.94
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	4.94	pg/g	4.94
74472-46-1	165-HxCB	U	4.94	pg/g	4.94
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	4.94	pg/g	4.94
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	4.94	pg/g	4.94
35065-30-6	170-HpCB	U	4.94	pg/g	4.94
52663-71-5	171-HpCB	CU	9.89	pg/g	9.89
52663-74-8	172-HpCB	U	4.94	pg/g	4.94
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	4.94	pg/g	4.94
40186-70-7	175-HpCB	U	4.94	pg/g	4.94
52663-65-7	176-HpCB	U	4.94	pg/g	4.94
52663-70-4	177-HpCB	U	4.94	pg/g	4.94
52663-67-9	178-HpCB	U	4.94	pg/g	4.94
52663-64-6	179-HpCB	U	4.94	pg/g	4.94
35065-29-3	180-HpCB	CU	9.89	pg/g	9.89
74472-47-2	181-HpCB	U	4.94	pg/g	4.94
60145-23-5	182-HpCB	U	4.94	pg/g	4.94
52663-69-1	183-HpCB	CU	9.89	pg/g	9.89
74472-48-3	184-HpCB	U	4.94	pg/g	4.94
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	4.94	pg/g	4.94
52663-68-0	187-HpCB	U	4.94	pg/g	4.94
74487-85-7	188-HpCB	U	4.94	pg/g	4.94
39635-31-9	189-HpCB	U	4.94	pg/g	4.94
41411-64-7	190-HpCB	U	4.94	pg/g	4.94
74472-50-7	191-HpCB	U	4.94	pg/g	4.94
74472-51-8	192-HpCB	U	4.94	pg/g	4.94

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
 U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	5497001	Date Collected:	10/15/2013 14:05	Matrix:	SOLID
Client Sample:	1613B /1668A Soil	Date Received:	10/22/2013 09:30	%Moisture:	21.7
Client ID:	AA1 thru AA13			Prep Basis:	Dry Weight
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 20:02	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-5	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	5.17 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	4.94	pg/g	4.94
52663-78-2	195-OcCB	U	4.94	pg/g	4.94
42740-50-1	196-OcCB	U	4.94	pg/g	4.94
33091-17-7	197-OcCB	CU	9.89	pg/g	9.89
68194-17-2	198-OcCB	CU	9.89	pg/g	9.89
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	4.94	pg/g	4.94
2136-99-4	202-OcCB	U	4.94	pg/g	4.94
52663-76-0	203-OcCB	U	4.94	pg/g	4.94
74472-52-9	204-OcCB	U	4.94	pg/g	4.94
74472-53-0	205-OcCB	U	4.94	pg/g	4.94
40186-72-9	206-NoCB	U	4.94	pg/g	4.94
52663-79-3	207-NoCB	U	4.94	pg/g	4.94
52663-77-1	208-NoCB	U	4.94	pg/g	4.94
2051-24-3	209-DeCB	U	4.94	pg/g	4.94
27323-18-8	Total Mono PCBs	U	4.94	pg/g	4.94
25512-42-9	Total Di PCBs	U	4.94	pg/g	4.94
25323-68-6	Total Tri PCBs	U	4.94	pg/g	4.94
26914-33-0	Total Tetra PCBs		5.57	pg/g	4.94
25429-29-2	Total Penta PCBs	U	4.94	pg/g	4.94
26601-64-9	Total Hexa PCBs	U	4.94	pg/g	4.94
28655-71-2	Total Hepta PCBs	U	4.94	pg/g	4.94
55722-26-4	Total Octa PCBs	U	4.94	pg/g	4.94
53742-07-7	Total Nona PCBs	U	4.94	pg/g	4.94
2051-24-3	Total Deca PCB	U	4.94	pg/g	4.94
1336-36-3	Total PCB Congeners		5.57	pg/g	4.94

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		290	494	pg/g	58.6	(15%-150%)
13C-3-MoCB		310	494	pg/g	62.6	(15%-150%)
13C-4-DiCB		315	494	pg/g	63.6	(25%-150%)
13C-15-DiCB		362	494	pg/g	73.3	(25%-150%)
13C-19-TrCB		369	494	pg/g	74.7	(25%-150%)
13C-37-TrCB		402	494	pg/g	81.3	(25%-150%)
13C-54-TeCB		341	494	pg/g	68.9	(25%-150%)
13C-77-TeCB		493	494	pg/g	99.6	(25%-150%)
13C-81-TeCB		487	494	pg/g	98.6	(25%-150%)
13C-104-PeCB		284	494	pg/g	57.4	(25%-150%)
13C-105-PeCB		398	494	pg/g	80.6	(25%-150%)
13C-114-PeCB		379	494	pg/g	76.6	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	5497001	Date Collected:	10/15/2013 14:05	Matrix:	SOLID
Client Sample:	1613B /1668A Soil	Date Received:	10/22/2013 09:30	%Moisture:	21.7
Client ID:	AA1 thru AA13			Prep Basis:	Dry Weight
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 20:02	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-5	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	5.17 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Paramname	Qual	Result	Units	PQL
Surrogate/Tracer recovery					
13C-118-PeCB		397	494	pg/g	80.2 (25%-150%)
13C-123-PeCB		412	494	pg/g	83.4 (25%-150%)
13C-126-PeCB		436	494	pg/g	88.1 (25%-150%)
13C-155-HxCB		312	494	pg/g	63.2 (25%-150%)
13C-156-HxCB		C	687	pg/g	69.5 (25%-150%)
13C-157-HxCB		C156L			
13C-167-HxCB		325	494	pg/g	65.8 (25%-150%)
13C-169-HxCB		390	494	pg/g	78.8 (25%-150%)
13C-188-HpCB		357	494	pg/g	72.3 (25%-150%)
13C-189-HpCB		367	494	pg/g	74.2 (25%-150%)
13C-202-OcCB		391	494	pg/g	79.1 (25%-150%)
13C-205-OcCB		418	494	pg/g	84.5 (25%-150%)
13C-206-NoCB		403	494	pg/g	81.5 (25%-150%)
13C-208-NoCB		421	494	pg/g	85.2 (25%-150%)
13C-209-DeCB		380	494	pg/g	76.8 (25%-150%)
13C-111-PeCB		433	494	pg/g	87.6 (30%-135%)
13C-28-TrCB		422	494	pg/g	85.3 (30%-135%)
13C-178-HpCB		392	494	pg/g	79.2 (30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

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SDG Number: L1320796

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12009268	LCS for batch 24704	13C-1-MoCB	C156L	50.9	(15%-140%)
		13C-3-MoCB		54.8	(15%-140%)
		13C-4-DiCB		55.6	(30%-140%)
		13C-15-DiCB		63.5	(30%-140%)
		13C-19-TrCB		64.5	(30%-140%)
		13C-37-TrCB		70.0	(30%-140%)
		13C-54-TeCB		58.5	(30%-140%)
		13C-77-TeCB		81.4	(30%-140%)
		13C-81-TeCB		80.8	(30%-140%)
		13C-104-PeCB		50.7	(30%-140%)
		13C-105-PeCB		68.1	(30%-140%)
		13C-114-PeCB		65.3	(30%-140%)
		13C-118-PeCB		67.9	(30%-140%)
		13C-123-PeCB		70.7	(30%-140%)
		13C-126-PeCB		71.1	(30%-140%)
		13C-155-HxCB		58.0	(30%-140%)
		13C-156-HxCB		C 61.3	(30%-140%)
		13C-157-HxCB		57.7	(30%-140%)
		13C-167-HxCB		66.4	(30%-140%)
		13C-169-HxCB		71.8	(30%-140%)
		13C-188-HpCB		69.1	(30%-140%)
		13C-189-HpCB		72.4	(30%-140%)
		13C-202-OcCB		74.3	(30%-140%)
		13C-205-OcCB		69.2	(30%-140%)
		13C-206-NoCB		74.4	(30%-140%)
		13C-208-NoCB		66.3	(30%-140%)
		13C-209-DeCB		73.4	(40%-125%)
		13C-211-PeCB		75.2	(40%-125%)
		13C-28-TrCB		68.0	(40%-125%)
		13C-178-HpCB			
12009269	LCSD for batch 24704	13C-1-MoCB	C156L	49.6	(15%-140%)
		13C-3-MoCB		53.8	(15%-140%)
		13C-4-DiCB		54.7	(30%-140%)
		13C-15-DiCB		66.1	(30%-140%)
		13C-19-TrCB		64.5	(30%-140%)
		13C-37-TrCB		76.6	(30%-140%)
		13C-54-TeCB		61.1	(30%-140%)
		13C-77-TeCB		91.9	(30%-140%)
		13C-81-TeCB		91.5	(30%-140%)
		13C-104-PeCB		54.2	(30%-140%)
		13C-105-PeCB		75.1	(30%-140%)
		13C-114-PeCB		71.8	(30%-140%)
		13C-118-PeCB		75.0	(30%-140%)
		13C-123-PeCB		79.0	(30%-140%)
		13C-126-PeCB		80.6	(30%-140%)
		13C-155-HxCB		60.5	(30%-140%)
		13C-156-HxCB		C 65.9	(30%-140%)
		13C-157-HxCB		63.0	(30%-140%)
		13C-167-HxCB		75.2	(30%-140%)
		13C-169-HxCB		74.3	(30%-140%)
		13C-188-HpCB		74.3	(30%-140%)

PCB Congeners Surrogate Recovery Report

SDG Number: L1320796

Matrix Type: SOLID

PCB Congeners

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of 3

Surrogate Recovery Report

SDG Number: L1320796

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5497001	AA1 thru AA13	13C-123-PeCB		83.4	(25%-150%)
		13C-126-PeCB		88.1	(25%-150%)
		13C-155-HxCB		63.2	(25%-150%)
		13C-156-HxCB	C	69.5	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		65.8	(25%-150%)
		13C-169-HxCB		78.8	(25%-150%)
		13C-188-HpCB		72.3	(25%-150%)
		13C-189-HpCB		74.2	(25%-150%)
		13C-202-OcCB		79.1	(25%-150%)
		13C-205-OcCB		84.5	(25%-150%)
		13C-206-NoCB		81.5	(25%-150%)
		13C-208-NoCB		85.2	(25%-150%)
		13C-209-DeCB		76.8	(25%-150%)
		13C-111-PeCB		87.6	(30%-135%)
		13C-28-TrCB		85.3	(30%-135%)
		13C-178-HpCB		79.2	(30%-135%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

PCB Congeners
Quality Control Summary
Spike Recovery Report

SDG Number: L1320796

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 24704

Matrix: SOLID

Lab Sample ID: 12009268

Analysis Date: 10/24/2013 16:51

Instrument: HRP791

Dilution: 1

Analyst: MJC

Prep Batch ID: 24704

Batch ID: 24706

CAS No.	Parmname		Amount	Spike	Recovery Acceptance	
			Added	Conc.	%	Limits
			pg/g	pg/g		
2051-60-7	LCS	1-MoCB	50.0	47.2	94.3	50-150
2051-62-9	LCS	3-MoCB	50.0	47.3	94.5	50-150
13029-08-8	LCS	4-DiCB	50.0	51.0	102	50-150
2050-68-2	LCS	15-DiCB	50.0	46.1	92.3	50-150
38444-73-4	LCS	19-TrCB	50.0	48.6	97.1	50-150
38444-90-5	LCS	37-TrCB	50.0	51.0	102	50-150
15968-05-5	LCS	54-TeCB	100	96.5	96.5	50-150
32598-13-3	LCS	77-TeCB	100	86.0	86	50-150
70362-50-4	LCS	81-TeCB	100	105	105	50-150
56558-16-8	LCS	104-PeCB	100	104	104	50-150
32598-14-4	LCS	105-PeCB	100	106	106	50-150
74472-37-0	LCS	114-PeCB	100	77.5	77.5	50-150
31508-00-6	LCS	118-PeCB	100	71.3	71.3	50-150
65510-44-3	LCS	123-PeCB	100	87.7	87.7	50-150
57465-28-8	LCS	126-PeCB	100	95.0	95	50-150
33979-03-2	LCS	155-HxCB	100	104	104	50-150
38380-08-4	LCS	156-HxCB	200	C	99.6	50-150
69782-90-7	LCS	157-HxCB		C156		
52663-72-6	LCS	167-HxCB	100	121	121	50-150
32774-16-6	LCS	169-HxCB	100	95.1	95.1	50-150
74487-85-7	LCS	188-HpCB	100	101	101	50-150
39635-31-9	LCS	189-HpCB	100	94.9	94.9	50-150
2136-99-4	LCS	202-OcCB	150	151	101	50-150
74472-53-0	LCS	205-OcCB	150	133	88.4	50-150
40186-72-9	LCS	206-NoCB	150	145	96.5	50-150
52663-77-1	LCS	208-NoCB	150	154	103	50-150
2051-24-3	LCS	209-DeCB	150	141	94	50-150

PCB Congeners
Quality Control Summary
Spike Recovery Report

SDG Number: L1320796
Client ID: LCSD for batch 24704
Lab Sample ID: 12009269
Instrument: HRP791
Analyst: MJC

Sample Type: Laboratory Control Sample Duplicate
Matrix: SOLID
Analysis Date: 10/24/2013 17:55
Prep Batch ID: 24704
Batch ID: 24706
Dilution: 1

CAS No.	Parname	Amount Added pg/g	Spike Conc.	Recovery %	Acceptance Limits	RPD %	Acceptance Limits	
			pg/g					
2051-60-7	LCSD 1-MoCB	50.0	45.9	91.9	50-150	2.61	0-20	
2051-62-9	LCSD 3-MoCB	50.0	46.5	93.1	50-150	1.53	0-20	
13029-08-8	LCSD 4-DiCB	50.0	50.5	101	50-150	0.938	0-20	
2050-68-2	LCSD 15-DiCB	50.0	45.4	90.8	50-150	1.65	0-20	
38444-73-4	LCSD 19-TrCB	50.0	49.4	98.8	50-150	1.76	0-20	
38444-90-5	LCSD 37-TrCB	50.0	51.0	102	50-150	0.0157	0-20	
15968-05-5	LCSD 54-TeCB	100	96.9	96.9	50-150	0.453	0-20	
32598-13-3	LCSD 77-TeCB	100	87.0	87	50-150	1.20	0-20	
70362-50-4	LCSD 81-TeCB	100	104	104	50-150	0.946	0-20	
56558-16-8	LCSD 104-PeCB	100	105	105	50-150	0.939	0-20	
32598-14-4	LCSD 105-PeCB	100	108	108	50-150	1.08	0-20	
74472-37-0	LCSD 114-PeCB	100	77.5	77.5	50-150	0.00775	0-20	
31508-00-6	LCSD 118-PeCB	100	71.9	71.9	50-150	0.885	0-20	
65510-44-3	LCSD 123-PeCB	100	86.1	86.1	50-150	1.82	0-20	
57465-28-8	LCSD 126-PeCB	100	93.8	93.8	50-150	1.23	0-20	
33979-03-2	LCSD 155-HxCB	100	105	105	50-150	0.994	0-20	
38380-08-4	LCSD 156-HxCB	200	C C156	199	99.5	50-150	0.0965	0-20
69782-90-7	LCSD 157-HxCB							
52663-72-6	LCSD 167-HxCB	100	120	120	50-150	0.921	0-20	
32774-16-6	LCSD 169-HxCB	100	92.6	92.6	50-150	2.63	0-20	
74487-85-7	LCSD 188-HpCB	100	103	103	50-150	2.00	0-20	
39635-31-9	LCSD 189-HpCB	100	95.7	95.7	50-150	0.793	0-20	
2136-99-4	LCSD 202-OcCB	150	150	99.8	50-150	0.700	0-20	
74472-53-0	LCSD 205-OcCB	150	135	89.9	50-150	1.74	0-20	
40186-72-9	LCSD 206-NoCB	150	143	95	50-150	1.55	0-20	
52663-77-1	LCSD 208-NoCB	150	155	103	50-150	0.479	0-20	
2051-24-3	LCSD 209-DeCB	150	139	92.4	50-150	1.76	0-20	

Method Blank Summary

SDG Number: L1320796
Client ID: MB for batch 24704
Lab Sample ID: 12009267
Column:

Client: ALPH001
Instrument ID: HRP791
Prep Date: 23-OCT-13

Matrix: SOLID
Data File: c24oct13a-4
Analyzed: 10/24/13 18:59

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 24704	12009268	c24oct13a-2	10/24/13	1651
02 LCSD for batch 24704	12009269	c24oct13a-3	10/24/13	1755
03 AA1 thru AA13	5497001	c24oct13a-5	10/24/13	2002

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009267			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	MB for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 18:59	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-4	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	5	pg/g	5.00
2051-61-8	2-MoCB	U	2	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB	U	4	pg/g	4.00
16605-91-7	5-DiCB	U	4	pg/g	4.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	4	pg/g	4.00
34883-43-7	8-DiCB	U	20	pg/g	20.0
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	4	pg/g	4.00
2050-67-1	11-DiCB	U	50	pg/g	50.0
2974-92-7	12-DiCB	CU	8	pg/g	8.00
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	4	pg/g	4.00
2050-68-2	15-DiCB	U	20	pg/g	20.0
38444-78-9	16-TrCB	U	4	pg/g	4.00
37680-66-3	17-TrCB	U	4	pg/g	4.00
37680-65-2	18-TrCB	CU	4	pg/g	4.00
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	20	pg/g	20.0
55702-46-0	21-TrCB	CU	8	pg/g	8.00
38444-85-8	22-TrCB	U	4	pg/g	4.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	4	pg/g	4.00
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	10	pg/g	10.0
38444-77-8	32-TrCB	U	2	pg/g	2.00

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
 U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

Page 2 of 8

SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009267			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	MB for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 18:59	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-4	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	4	pg/g	4.00
38444-87-0	36-TrCB	U	4	pg/g	4.00
38444-90-5	37-TrCB	U	20	pg/g	20.0
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	4	pg/g	4.00
38444-93-8	40-TeCB	CU	4	pg/g	4.00
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	4	pg/g	4.00
41464-39-5	44-TeCB	CU	6	pg/g	6.00
70362-45-7	45-TeCB	CU	4	pg/g	4.00
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	4	pg/g	4.00
62796-65-0	50-TeCB	CU	4	pg/g	4.00
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	4	pg/g	4.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	6	pg/g	6.00
33025-41-1	60-TeCB	U	4	pg/g	4.00
33284-53-6	61-TeCB	CU	8	pg/g	8.00
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	5	pg/g	5.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
 U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009267			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	MB for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 18:59	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-4	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	5	pg/g	5.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	4	pg/g	4.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	4	pg/g	4.00
33284-52-5	80-TeCB	U	4	pg/g	4.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	5	pg/g	5.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	6	pg/g	6.00
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4	pg/g	4.00
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	6	pg/g	6.00
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	4	pg/g	4.00
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	4	pg/g	4.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009267			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	MB for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 18:59	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-4	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4	pg/g	4.00
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	5	pg/g	5.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	4	pg/g	4.00
70362-41-3	108-PeCB	CU	4	pg/g	4.00
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4	pg/g	4.00
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	4	pg/g	4.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	4	pg/g	4.00

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009267			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	MB for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 18:59	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-4	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6	pg/g	6.00
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	4	pg/g	4.00
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4	pg/g	4.00
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	4	pg/g	4.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	8	pg/g	8.00
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	8	pg/g	8.00
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	4	pg/g	4.00
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009267			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	MB for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 18:59	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-4	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	4	pg/g	4.00
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	4	pg/g	4.00
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	4	pg/g	4.00
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
 U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009267			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	MB for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 18:59	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-4	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	4	pg/g	4.00
68194-17-2	198-OcCB	CU	4	pg/g	4.00
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
27323-18-8	Total Mono PCBs	U	2	pg/g	2.00
25512-42-9	Total Di PCBs	U	2	pg/g	2.00
25323-68-6	Total Tri PCBs	U	2	pg/g	2.00
26914-33-0	Total Tetra PCBs	U	2	pg/g	2.00
25429-29-2	Total Penta PCBs	U	2	pg/g	2.00
26601-64-9	Total Hexa PCBs	U	2	pg/g	2.00
28655-71-2	Total Hepta PCBs	U	2	pg/g	2.00
55722-26-4	Total Octa PCBs	U	2	pg/g	2.00
53742-07-7	Total Nona PCBs	U	2	pg/g	2.00
2051-24-3	Total Deca PCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners	U	2	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		99.3	200	pg/g	49.6	(15%-150%)
13C-3-MoCB		113	200	pg/g	56.3	(15%-150%)
13C-4-DiCB		114	200	pg/g	57.0	(25%-150%)
13C-15-DiCB		138	200	pg/g	68.9	(25%-150%)
13C-19-TrCB		136	200	pg/g	68.1	(25%-150%)
13C-37-TrCB		153	200	pg/g	76.5	(25%-150%)
13C-54-TeCB		127	200	pg/g	63.4	(25%-150%)
13C-77-TeCB		184	200	pg/g	92.2	(25%-150%)
13C-81-TeCB		181	200	pg/g	90.5	(25%-150%)
13C-104-PeCB		110	200	pg/g	54.8	(25%-150%)
13C-105-PeCB		149	200	pg/g	74.6	(25%-150%)
13C-114-PeCB		141	200	pg/g	70.7	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009267			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	MB for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 18:59	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-4	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
Surrogate/Tracer recovery					
13C-118-PeCB		148	200	pg/g	(25%-150%)
13C-123-PeCB		154	200	pg/g	(25%-150%)
13C-126-PeCB		162	200	pg/g	(25%-150%)
13C-155-HxCB		117	200	pg/g	(25%-150%)
13C-156-HxCB	C	261	400	pg/g	(25%-150%)
13C-157-HxCB	C156L				
13C-167-HxCB		124	200	pg/g	(25%-150%)
13C-169-HxCB		149	200	pg/g	(25%-150%)
13C-188-HpCB		133	200	pg/g	(25%-150%)
13C-189-HpCB		137	200	pg/g	(25%-150%)
13C-202-OcCB		144	200	pg/g	(25%-150%)
13C-205-OcCB		156	200	pg/g	(25%-150%)
13C-206-NoCB		148	200	pg/g	(25%-150%)
13C-208-NoCB		158	200	pg/g	(25%-150%)
13C-209-DeCB		151	200	pg/g	(25%-150%)
13C-111-PeCB		164	200	pg/g	(30%-135%)
13C-28-TrCB		160	200	pg/g	(30%-135%)
13C-178-HpCB		149	200	pg/g	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009268			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	LCS for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 16:51	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-2	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		47.2	pg/g	5.00
2051-62-9	3-MoCB		47.3	pg/g	2.00
13029-08-8	4-DiCB		51.0	pg/g	4.00
2050-68-2	15-DiCB		46.1	pg/g	20.0
38444-73-4	19-TrCB		48.6	pg/g	2.00
38444-90-5	37-TrCB		51.0	pg/g	20.0
15968-05-5	54-TeCB		96.5	pg/g	2.00
32598-13-3	77-TeCB		86.0	pg/g	2.00
70362-50-4	81-TeCB		105	pg/g	2.00
56558-16-8	104-PeCB		104	pg/g	2.00
32598-14-4	105-PeCB		106	pg/g	2.00
74472-37-0	114-PeCB		77.5	pg/g	2.00
31508-00-6	118-PeCB		71.3	pg/g	4.00
65510-44-3	123-PeCB		87.7	pg/g	2.00
57465-28-8	126-PeCB		95.0	pg/g	2.00
33979-03-2	155-HxCB		104	pg/g	2.00
38380-08-4	156-HxCB	C	199	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		121	pg/g	2.00
32774-16-6	169-HxCB		95.1	pg/g	2.00
74487-85-7	188-HpCB		101	pg/g	2.00
39635-31-9	189-HpCB		94.9	pg/g	2.00
2136-99-4	202-OcCB		151	pg/g	2.00
74472-53-0	205-OcCB		133	pg/g	2.00
40186-72-9	206-NoCB		145	pg/g	2.00
52663-77-1	208-NoCB		154	pg/g	2.00
2051-24-3	209-DeCB		141	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		102	200	pg/g	50.9	(15%-140%)
13C-3-MoCB		110	200	pg/g	54.8	(15%-140%)
13C-4-DiCB		111	200	pg/g	55.6	(30%-140%)
13C-15-DiCB		127	200	pg/g	63.5	(30%-140%)
13C-19-TrCB		129	200	pg/g	64.5	(30%-140%)
13C-37-TrCB		140	200	pg/g	70.0	(30%-140%)
13C-54-TeCB		117	200	pg/g	58.5	(30%-140%)
13C-77-TeCB		163	200	pg/g	81.4	(30%-140%)
13C-81-TeCB		162	200	pg/g	80.8	(30%-140%)
13C-104-PeCB		101	200	pg/g	50.7	(30%-140%)
13C-105-PeCB		136	200	pg/g	68.1	(30%-140%)
13C-114-PeCB		131	200	pg/g	65.3	(30%-140%)
13C-118-PeCB		136	200	pg/g	67.9	(30%-140%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009268			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	LCS for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 16:51	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-2	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parmname	Qual	Result	Units	PQL
Surrogate/Tracer recovery					
13C-123-PeCB		141	200	pg/g	70.7 (30%-140%)
13C-126-PeCB		142	200	pg/g	71.1 (30%-140%)
13C-155-HxCB		116	200	pg/g	58.0 (30%-140%)
13C-156-HxCB		C	245	pg/g	61.3 (30%-140%)
13C-157-HxCB		C156L			
13C-167-HxCB		115	200	pg/g	57.7 (30%-140%)
13C-169-HxCB		133	200	pg/g	66.4 (30%-140%)
13C-188-HpCB		144	200	pg/g	71.8 (30%-140%)
13C-189-HpCB		138	200	pg/g	69.1 (30%-140%)
13C-202-OcCB		145	200	pg/g	72.4 (30%-140%)
13C-205-OcCB		149	200	pg/g	74.3 (30%-140%)
13C-206-NoCB		138	200	pg/g	69.2 (30%-140%)
13C-208-NoCB		149	200	pg/g	74.4 (30%-140%)
13C-209-DeCB		133	200	pg/g	66.3 (30%-140%)
13C-111-PeCB		147	200	pg/g	73.4 (40%-125%)
13C-28-TrCB		150	200	pg/g	75.2 (40%-125%)
13C-178-HpCB		136	200	pg/g	68.0 (40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009269			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	LCSD for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 17:55	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-3	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		45.9	pg/g	5.00
2051-62-9	3-MoCB		46.5	pg/g	2.00
13029-08-8	4-DiCB		50.5	pg/g	4.00
2050-68-2	15-DiCB		45.4	pg/g	20.0
38444-73-4	19-TrCB		49.4	pg/g	2.00
38444-90-5	37-TrCB		51.0	pg/g	20.0
15968-05-5	54-TeCB		96.9	pg/g	2.00
32598-13-3	77-TeCB		87.0	pg/g	2.00
70362-50-4	81-TeCB		104	pg/g	2.00
56558-16-8	104-PeCB		105	pg/g	2.00
32598-14-4	105-PeCB		108	pg/g	2.00
74472-37-0	114-PeCB		77.5	pg/g	2.00
31508-00-6	118-PeCB		71.9	pg/g	4.00
65510-44-3	123-PeCB		86.1	pg/g	2.00
57465-28-8	126-PeCB		93.8	pg/g	2.00
33979-03-2	155-HxCB		105	pg/g	2.00
38380-08-4	156-HxCB	C	199	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		120	pg/g	2.00
32774-16-6	169-HxCB		92.6	pg/g	2.00
74487-85-7	188-HpCB		103	pg/g	2.00
39635-31-9	189-HpCB		95.7	pg/g	2.00
2136-99-4	202-OcCB		150	pg/g	2.00
74472-53-0	205-OcCB		135	pg/g	2.00
40186-72-9	206-NoCB		143	pg/g	2.00
52663-77-1	208-NoCB		155	pg/g	2.00
2051-24-3	209-DeCB		139	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		99.2	200	pg/g	49.6	(15%-140%)
13C-3-MoCB		108	200	pg/g	53.8	(15%-140%)
13C-4-DiCB		109	200	pg/g	54.7	(30%-140%)
13C-15-DiCB		132	200	pg/g	66.1	(30%-140%)
13C-19-TrCB		129	200	pg/g	64.5	(30%-140%)
13C-37-TrCB		153	200	pg/g	76.6	(30%-140%)
13C-54-TeCB		122	200	pg/g	61.1	(30%-140%)
13C-77-TeCB		184	200	pg/g	91.9	(30%-140%)
13C-81-TeCB		183	200	pg/g	91.5	(30%-140%)
13C-104-PeCB		108	200	pg/g	54.2	(30%-140%)
13C-105-PeCB		150	200	pg/g	75.1	(30%-140%)
13C-114-PeCB		144	200	pg/g	71.8	(30%-140%)
13C-118-PeCB		150	200	pg/g	75.0	(30%-140%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

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SDG Number:	L1320796	Client:	ALPH001	Project:	ALPH00313
Lab Sample ID:	12009269			Matrix:	SOLID
Client Sample:	QC for batch 24704				
Client ID:	LCSD for batch 24704			Prep Basis:	As Received
Batch ID:	24706	Method:	EPA Method 1668A		
Run Date:	10/24/2013 17:55	Analyst:	MJC	Instrument:	HRP791
Data File:	c24oct13a-3	Prep Method:	SW846 3540C	Dilution:	1
Prep Batch:	24704	Aliquot:	10 g	Prep SOP Ref:	CF-OA-E-001
Prep Date:	23-OCT-13				

CAS No.	Parmname	Qual	Result	Units	PQL
Surrogate/Tracer recovery					
13C-123-PeCB		158	200	pg/g	(30%-140%)
13C-126-PeCB		161	200	pg/g	(30%-140%)
13C-155-HxCB		121	200	pg/g	(30%-140%)
13C-156-HxCB	C	264	400	pg/g	(30%-140%)
13C-157-HxCB	C156L				
13C-167-HxCB		126	200	pg/g	(30%-140%)
13C-169-HxCB		150	200	pg/g	(30%-140%)
13C-188-HpCB		149	200	pg/g	(30%-140%)
13C-189-HpCB		149	200	pg/g	(30%-140%)
13C-202-OcCB		157	200	pg/g	(30%-140%)
13C-205-OcCB		167	200	pg/g	(30%-140%)
13C-206-NoCB		159	200	pg/g	(30%-140%)
13C-208-NoCB		166	200	pg/g	(30%-140%)
13C-209-DeCB		155	200	pg/g	(30%-140%)
13C-111-PeCB		163	200	pg/g	(40%-125%)
13C-28-TrCB		158	200	pg/g	(40%-125%)
13C-178-HpCB		152	200	pg/g	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data